

Hemlock Woolly Adelgid (HWA) and Elongate Hemlock Scale (EHS) Treatment Suggestions for Grey Towers National Historic Site - 2019/2020

- Hwa and elongate hemlock scale are both present at Grey Towers.
- No hemlocks being selected for treatment will be next to any type of water body.
- Suggested pesticides: imidacloprid and dinotefuran are both systemic insecticides. Imidacloprid, effective for HWA control, takes several months to get into the trees system and start seeing treatment effects, is effective for 5 plus years. Dinotefuran, effective for scale and hwa control, is absorbed much more rapidly than imidacloprid (several weeks), however has a short longevity of chemical effectiveness (1 year). Both treatments are recommended to provide suppression of both scale and hwa populations.
- Horticultural oil may be used in ornamental settings, such as the hemlock hedges, but is not practical in large trees and forest setting.
- **Follow the pesticide label instructions and do not exceed the maximum active ingredient per acre per year.**

Due to receiving funding late in the year, treatments cannot begin until fall. Treatments might be best achieved by starting with the imidacloprid treatments in the fall and the dinotefuran in the early spring, before bud-break.

For reference/examples: listed below is a summary of what the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, Division of Forest Health uses in their Hemlock Woolly Adelgid Suppression Program. New York Department of Environmental Conservation's summary is also included, which is only a basal bark trunk spray mixture of both imidacloprid and dinotefuran.

PA: Products used and application rates

-Imidacloprid -Xytect 75WSP and Bandit 2F: 0.025 ounces a.i. per DBH,
label max: 0.4 lbs a.i./acre/yr
-Dinotefuran (when scale is present) -Safari 20SG: 0.04583 ounces a.i. per DBH,
label max: 0.54 lbs a.i. /acre/yr

Application techniques

-Imidacloprid Soil injection- Kioritz soil injectors and CoreTect tablets. Imidacloprid (0.5 ounces mix/inch)
-Dinotefuran. Mostly soil injection, limited use of basal bark trunk spray with metered nozzles (NJ Phillips's 20 ml splatter gun and Spraying Systems' Meterjet model # 23624)

NY: Products used and application rates

Imidacloprid – label max: 0.4 lbs a.i./acre/yr - (0.025 oz/DBH)
Dinotefuran – label max: 0.54 lbs a.i. /acre/yr – (0.035 oz/DBH)

Application techniques

Basal bark trunk spray tank mix of imidacloprid and dinotefuran

PA also uses the CoreTect tablets (imidacloprid), 2-3 tablets per inch DBH depending on tree size, and not exceeding the label recommendations.

Using PA's application rates at Grey Towers would be consistent with other HWA and EHS scale treatments being done in Pennsylvania and are well within the recommendations of the insecticide labels, as is NY's.

Tree selection and marking:

USDA FS, MFO will help preselect hemlock trees for treatment. A one acre grid system will be used so that the active ingredient of each insecticide is not exceeded.

The maximum a.i. will be reach for dinotefuran at 188 cummaltive inches DBH/acre.

The maximum a.i. for imidacloprid is 256 cummaltive inches DBH/acre

Preselected Trees; a strip of flagging approximately 2-4 inches long will be stapled to each tree (usually on opposite side of tree, away from public's view), with tree DBH in inches marked with permanent marker. Color of flagging; orange flagging means tree is to receive both imidacloprid and dinotefuran treatment; green equals just imidacloprid.

Also, it is recommended that trees be marked with small paint spot, 1-2 inches in size, at the base of tree on the same side as the stapled flagging, (one color for each type of application) so it is visible which trees were treated (color of paint will be determine to indicate the year of and type of treatment). Flagging will be removed after the tree has received all treatments designated for that hemlock tree.

So far, 261 hemlock trees have been selected for treatment in 13 acres in the hemlock stand behind the mansion; for a total total of 2,310 inches DBH for dinotefuran and 3,059 inches DBH for imidacloprid.

Draft map of July's visit of selected hemlock tree locations below; orange triangle = both treatments, green triangle equals just imidacloprid.

